MECHANICAL ENGINEERING TECHNICAL ELECTIVES COURSES (PROPOSED)

Course	F23	S24	F24	S25	F25	S26	F26	S27	F27	S28
ME Courses										
ME 4343 Intermediate Heat Transfer		X			X			X		
ME 4833 Intermediate Fluid Mechanics			X			X			X	
ME 4353 Alternative Energy Sources		X		X		X		X		X
ME 4373 Air Conditioning	X		X		X		X		X	
ME 4543 Combustion Engines	X		X		X		X		X	
ME 4393 Power Generation System		X		X		X		X		X
ME 4193 Automotive Engineering		X		X		X		X		X
ME 4123 Failure of Engineering Materials	X		X		X		X		X	
ME 4133 Mechanical Metallurgy	X		X		X		X		X	
ME 4233 Fundamentals of FEA		X		X		X		X		X
ME 4990 Special Topics in Mechanical Eng.										
Additional Courses										
ABE 4613 Biomechanics										
EM 4123 Introduction of Finite Element		X		X		X		X		X
EM 4133 Mech. Composite Material		X		X		X		X		X
EM 4143 Engineering Design Optimization		X		X		X		X		X
EM 4213 Advanced Mech. Material		X		X		X		X		X
IE 4553 Engineering Law and Ethics										
IE 4613 Engineering Statistics I	X	X	X	X	X	X	X	X	X	X
IE 4623 Engineering Statistics II	X	X	X	X	X	X	X	X	X	X
IE 4733 Linear Programming		X		X		X		X		X
ECE 4913 Feedback Control Systems I	X		X		X		X		X	
ASE 4233 Structural Dynamics										
ASE 4423 Intermediate Comp. Fluid Mech.										
ASE 4433 Fund Num. Grid Gen.										
Any 4000 level Math course										

Please note:

1. At least one of the three technical elective requirements must be a course offered by the ME department (ME 4XXX).
2. The Topic for ME 4990 will be announced the semester the course will be offered.
3. These courses are outside of ME, and the schedule is subject to change.
4. Students are limited to ONE Directed Individual Studies (DIS) course to apply towards the three technical elective requirements.

Curriculum Change Proposal

To aid our students in selecting these courses, we also propose augmenting the current technical elective list with a list of classes clustered by discipline/interest. Examples of the clustering are below.

The highlighted courses are not currently listed on the Mechanical Engineering Technical Elective Course List, but we would like to consider them. The below list of courses has been vetted to ensure that our students meet the prerequisite requirements of these courses.

Energy/Environmental
ME 4353 – Alternative Energy Sources
ME 4373 – Air Conditioning
ME 4990 – Power Generation Systems
PTE 4993 - Petroleum Econ Analysis
ME 4543 – Combustion Engines

Materials
ME 4123 – Failure of Engineering Materials
ME 4133 – Mechanical Metallurgy
ABE 4523 - Biomedical Materials
CHE 4143 - Adv Poly/Composite Materials
EM 4133 – Mechanics of Composite Materials

Fluid/Thermal Mechanics
ME 4833 – Int. Fluid Mechanics
ASE 4423 – Int. Comp Fluid Dynamics
ME 4343 – Intermediate Heat Transfer
ME 4543 – Combustion Engines

Math and Science
IE 4613 - Engineering Statistics I
IE 4624 - Engineering Statistics II
IE 4733 – Linear Programming
ASE 4233 - Structural Dynamics
Any 4000 level Math course

Solid Mechanics
EM 4213 – Advanced Mechanics of Materials
EM 4123 – Intro. to Finite Element Methods
EM 4133 – Mechanics of Composite Materials
ABE 4613 – Biomechanics
ME 4233 – Fundamentals of FEA

Medical
IE 4113 - Human Factors
ABE 4613 – Biomechanics
ABE 4523 - Biomedical Materials
CH 4513 - Organic Chemistry I
CH 4523 - Organic Chemistry II

Management/Entrepreneurship
IE 4923 – Six Sigma Methods and Project
PTE 4993 - Petroleum Econ Analysis
CE 4753 - Construction Cost Estimating